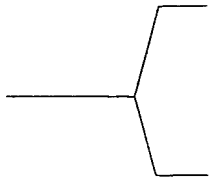
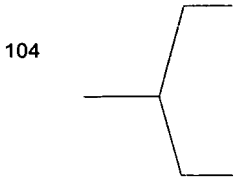
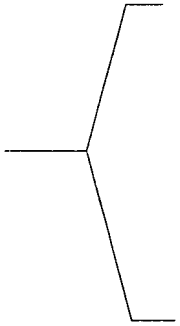



```
class A {
  void F1(int) {
     System.out.println("A.F1");
  }
  void F2() {...}
}
```




```
class B extends A {
void F1(int) {
     System.out.println("B.F1");
  }
}
```




```
class C {
  static void F3(A aa) {
     aa.F1(0);
  }
  public static void main(String args[]) {
     a = new A();
     b = new B()
     F3(a);
     F3(b);
  }
}
```

Top Secret - SCO Confidential

Figure 1

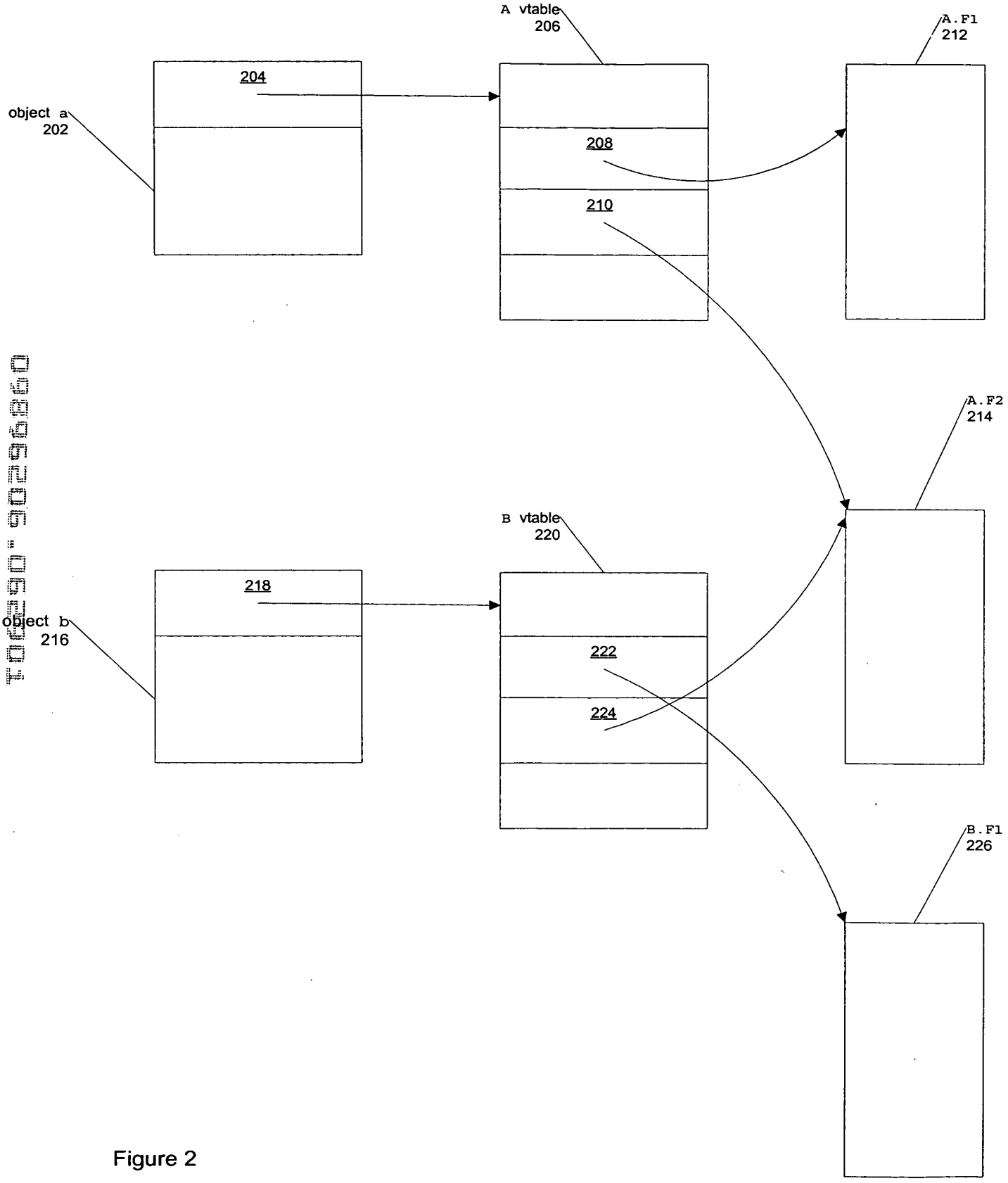
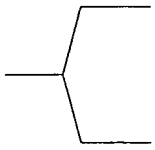
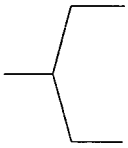

A vtable
206
A.F1
212
204
object a
202
208
210
A.F2
214
B vtable
220
218
object b
216
222
224
B.F1
226

Figure 2



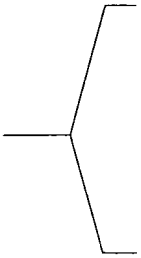
302

```
interface D {
     void G1(int);
     float G2(float, int);
}
```



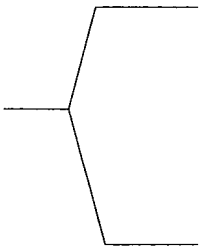
304

```
interface E {
  void G1(int);
  void G3(int);
}
```



306

```
class F implements D {
  void G4();
  void G1() {
    System.out.println(F.G1);
  }
  float G2(float, int);
}
```



308

```
class G implements D, E {
     void G1() {
       System.out.println(G.G1);
     }
     void G3(int);
   float G2(float, int);
}
```

Figure 3

Docket No. 2207/11235

310

```
class H {
  static void G4(D d) {
    d.G1(0);
  }
  public static void main(String args[]) {
    f = new F();
    g = new G();
    G4((D)f);
    G4((D)g);
  }
}
```

Figure 3B

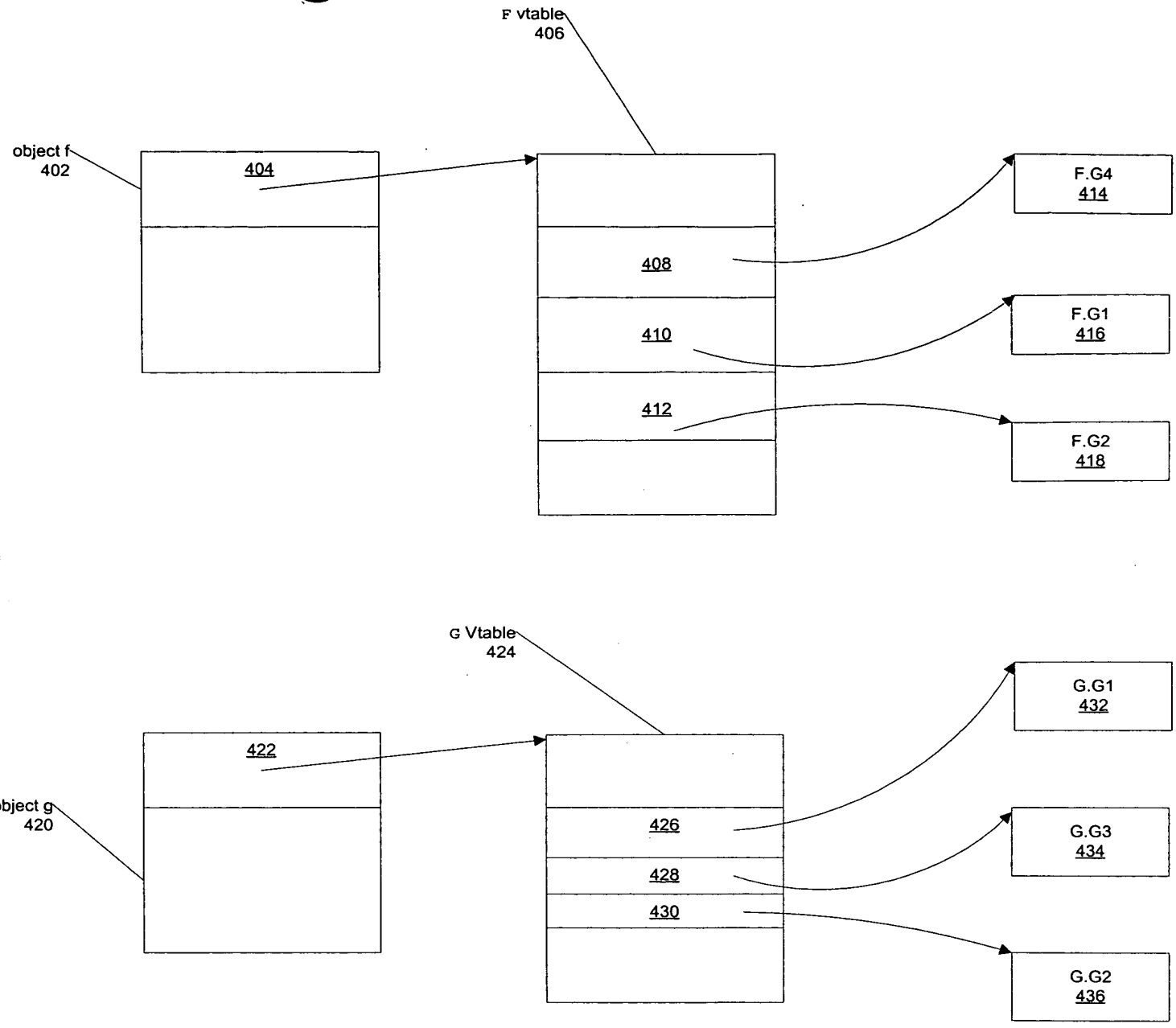

F vtable
406
object f
402
404
408
410
412
F.G4
414
F.G1
416
F.G2
418
G Vtable
424
422
object g
420
426
428
430
G.G1
432
G.G3
434
G.G2
436

Figure 4

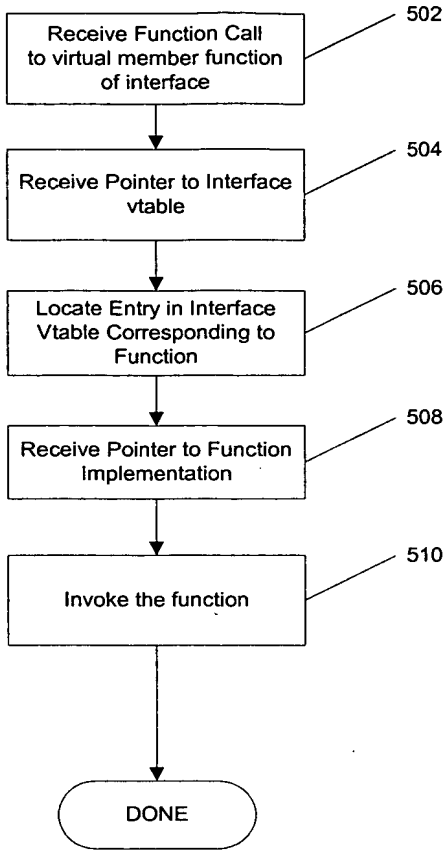

Receive Function Call to virtual member function of interface
502
Receive Pointer to Interface vtable
504
Locate Entry in Interface Vtable Corresponding to Function
506
Receive Pointer to Function Implementation
508
Invoke the function
510
DONE

Figure 5

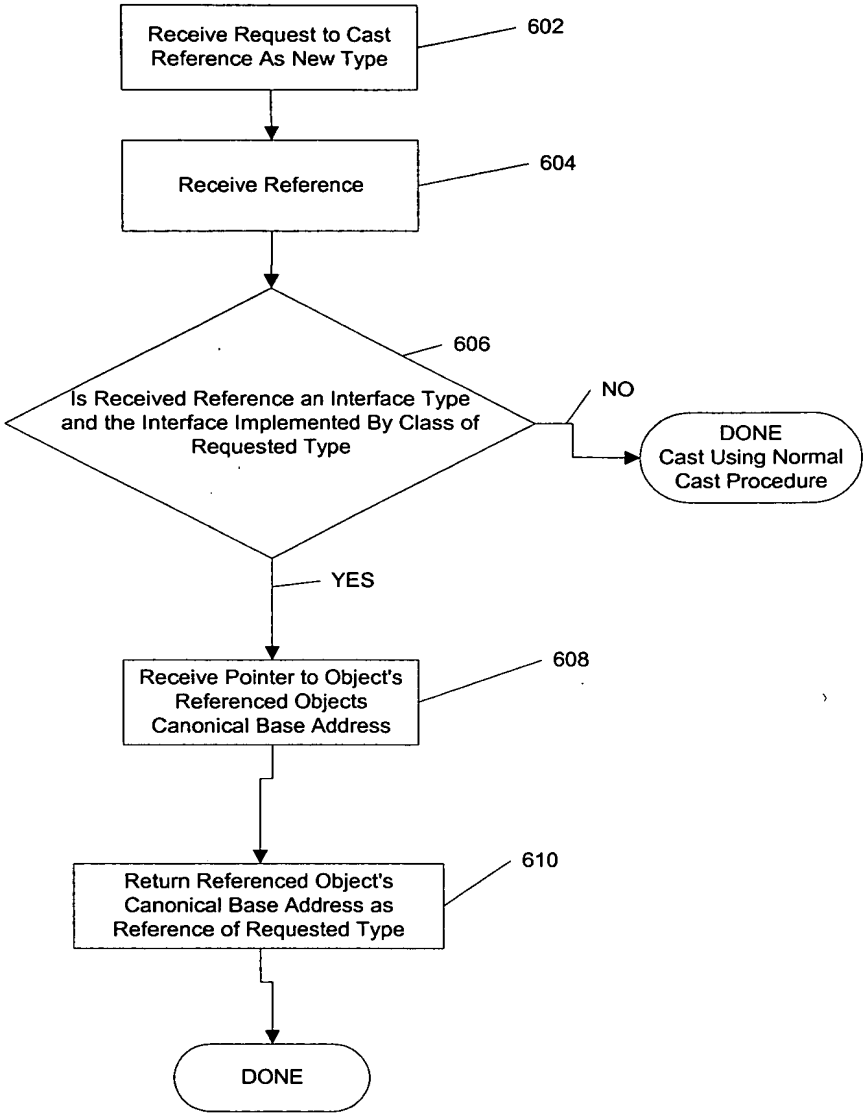

Receive Request to Cast Reference As New Type
602
Receive Reference
604
606
Is Received Reference an Interface Type and the Interface Implemented By Class of Requested Type
NO
DONE Cast Using Normal Cast Procedure
YES
Receive Pointer to Object's Referenced Objects Canonical Base Address
608
Return Referenced Object's Canonical Base Address as Reference of Requested Type
610
DONE

Figure 6

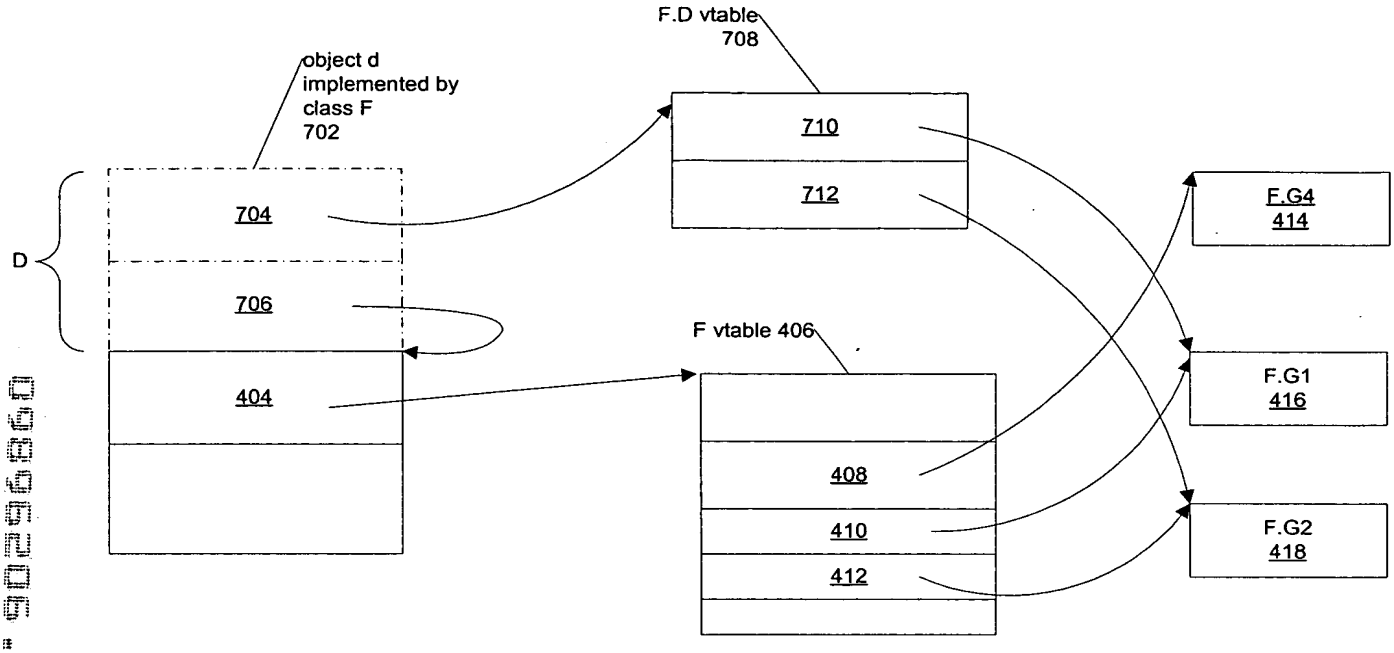

F.D vtable
708
object d
implemented by
class F
702
710
712
704
D
706
404
F vtable 406
408
410
412
F.G4
414
F.G1
416
F.G2
418

Figure 7a

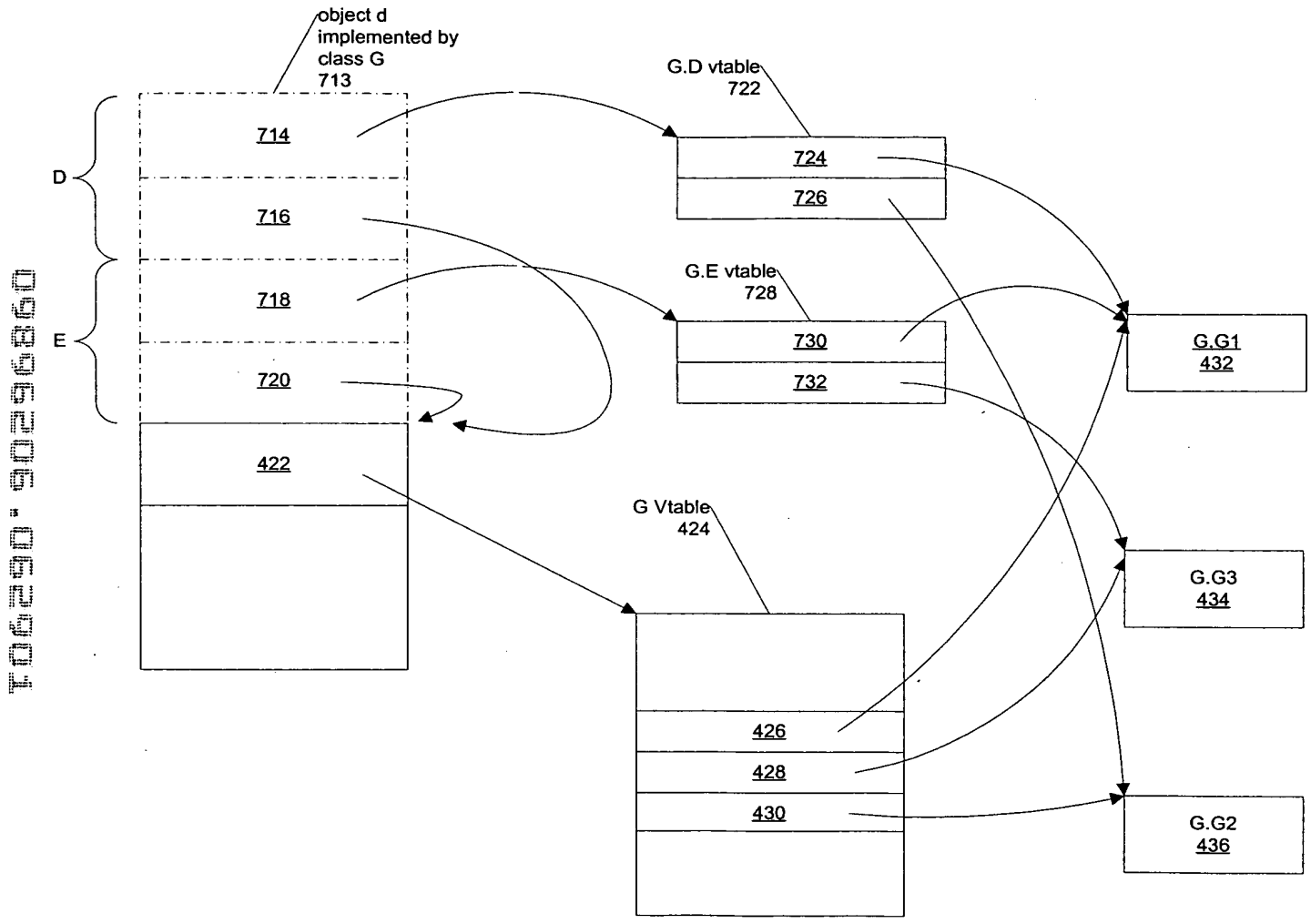

object d
implemented by
class G
713
D
E
714
716
718
720
422
G.D vtable
722
724
726
G.E vtable
728
730
732
G Vtable
424
426
428
430
G.G1
432
G.G3
434
G.G2
436

Figure 7b